

REMARKS

The foregoing amendment amends Claim 1 to clarify the claimed invention. Claims 1-41 are currently pending in this application. For the reasons set forth below, Applicant believes that the rejections should be withdrawn and that Claims 1-41 are in condition for allowance.

REJECTION OF CLAIMS 1-10 UNDER 35 U.S.C. 102(b)

The Examiner rejected Claims 1-10 under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 4,975,821 to Lethellier ("Lethellier"). In order to anticipate a claim under 35 U.S.C. 102(b), a reference must disclose each and every element of a claim. As discussed below, this rejection is respectfully traversed.

Claim 1

In response to Applicant's previous argument the Examiner alleged that the language regarding the saturable reactor operating in a saturation region when the second switch is on is not given patentable weight because it is in narrative form. To the extent that the Examiner is alleging that any function must be recited according to 112, paragraph 6, Applicant disagrees. Claim 1 recites a saturable reactor. The claimed operation within a saturation region describes the operation of the saturable reactor. Claim 1 has been amended to further clarify the invention in an effort to move prosecution forward. The Examiner admitted that Lethellier does not describe a saturable reactor operating in a saturation region. It is respectfully submitted that Claim 1 requires this element and thus, the claim is patentable over the cited reference.

Claim 1 as amended requires a first return circuit being connected to the first series circuit and including a second switch and a snubber capacitor that are connected in series and configured to return energy accumulated in a saturable reactor, wherein the saturable reactor is connected in parallel with the primary winding of the transformer and is *configured to operate in a saturation region when the second switch is in an on state*, and the DC converter

includes a control circuit to turn on and off the first and second switches alternately.
(*emphasis added*).

In rejecting Claim 1, the Examiner alleged that the switch SW2 and the parallel inductance of the primary L_p of Lethellier (Fig. 2) correspond to the second switch and saturable reactor recited by the claim. According to one embodiment of the invention, as illustrated in Figure 5, when the second switch Q2 is ON stored energy of the saturable reactor SL1 is discharged and a capacitor C3 is charged in a first stage, followed by the discharge of capacitor C3 to reset the magnetic flux of the saturable reactor SL1 in a second stage, and then the *saturable reactor SL1 operates in the saturation region $H_s:Bf-Bg$* in a third stage. (*emphasis added*). (See e.g., [0074]-[0081]; Figs. 5, 9 and 10).

The claimed configuration of the elements results in an operation that differs from the operation of the circuit described by Lethellier. Lethellier does not disclose a saturable reactor operating in a saturation region when the second switch is in an on state, as required by Claim 1. Lethellier discloses that when switch SW2 is turned ON the voltage on the primary of transformer T_1 remains connected to capacitor C2 after the inductive current reverses, and the capacitor C2 then discharges into the transformer T_1 . (See Fig. 2; Column 3, ll. 50-54). Lethellier does not describe a parallel inductance L_p being operated in a saturation region when the second switch SW2 is ON. Accordingly, Claim 1 is not anticipated by Lethellier.

A comparison of Figure 2 of Lethellier to Figure 5 of the present invention clearly illustrates that Lethellier does not disclose or suggest the second switch and saturable reactor as claimed. Lethellier fails to describe a saturable reactor that operates in a saturation region when the second switch is in an on state, as required by Claim 1. Accordingly, Claim 1 is not anticipated by Lethellier.

Claims 2-10

Claims 2-10 depend from Claim 1. Accordingly, for at least the same reasons discussed above, Claims 2-10 are patentable over Lethellier.

REJECTION OF CLAIMS 11-20 and 29-41 UNDER 35 U.S.C. 103(a)

The Examiner rejected Claims 11-20 and 29-41 under 35 U.S.C. 103(a) as being unpatentable over Lethellier in combination with Applicant's prior art Figure 1 and U.S. Patent No. 5,570,278 to Cross ("Cross") and further in combination with U.S. Patent No. 6,278,621 to Xia et al. ("Xia"). The Examiner has not established a prima facie case of obviousness. As discussed below, this rejection is respectfully traversed.

Claims 11-20 and 29-41 depend from Claim 1. As discussed in more detail above, Lethellier does not describe saturable reactor that operates in a saturation region when the second switch is in an on state as required by Claim 1. PA 1, Cross and Xia do not describe this feature either. Accordingly, for at least the same reasons discussed above with regard to Lethellier, all the features or elements of Claims 11-20 and 29-41 are not obvious in view of Lethellier in combination with PA 1 and Cross, and further in combination with Xia. Thus, Claims 11-20 and 29-41 are patentable over Lethellier in combination with PA 1 and Cross, and further in combination with Xia.

ALLOWABLE SUBJECT MATTER

The Examiner indicated that Claims 21-28 would be allowable is rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 21-28 depend directly or indirectly from independent Claim 1 and Applicant believes that Claims 21-28 are patentable over the cited references for at least the same reasons as Claim 1. Accordingly, Claims 21-28 have not been rewritten in independent form.

CONCLUSION

The foregoing is submitted as a complete response to the Office Action identified above. Applicant believes that this application is now in condition for allowance and solicits a notice to that effect. If there are any issues that can be addressed via telephone, the Examiner is asked to contact the undersigned at 404.685.6799. The Commissioner is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account 11-0855.

Respectfully submitted,

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